

**REMARKS/ARGUMENTS****New POWER OF ATTORNEY/CORRESPONDENCE ADDRESS****(Customer Number 51472)**

The Applicant is submitting herewith a new “power of attorney” that both (1) appoints practitioners associated with USPTO customer number (CN) 51472 and also (2) indicates the new correspondence address of the present U.S. utility patent application to be that which is associated with USPTO CN 51472.

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***Brief Summary of Status***

Claims 1-63 are pending in the application.

Claims 1-5, 7, 13-17, 20, 26-29, 31-39, 41, 47-53, 55, and 61-63 are rejected.

Claims 6, 8-12, 18, 19, 21-25, 30, 40, 42-46, 54, and 56-60 are objected to.

***35 U.S.C. § 102***

The Examiner asserts:

“2. Claims 1, 2, 4, 5, 14, 16, 27, 35, 36, 38, 39, 48, 50, 52, 53, and 62 are rejected under 35 U.S.C. 102(e) as being anticipated by Hoffmann (7,212,499 B2).” (non-final office action, Part of Paper No./Mail Date 20070613, p. 2)

***35 U.S.C. § 103***

The Examiner asserts:

“4. Claims 7, 20, 29, 33, 41, 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoffmann (7,212,499 B2) in view of Shurmer (5,974,237).” (non-final office action, Part of Paper No./Mail Date 20070613, p. 9)

The Examiner asserts:

“5. Claims 3, 17, 31, 37, and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoffmann (7,212,499 B2) in view of Jorgensen (6,640,248 B1).” (non-final office action, Part of Paper No./Mail Date 20070613, p. 11)

The Examiner asserts:

“6. Claims 13, 26, 32, 47, and 61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoffmann (7,212,499 B2) in view of Olson (6,928,295 B2).” (non-final office action, Part of Paper No./Mail Date 20070613, p. 12)

The Examiner asserts:

“7. Claims 15, 28, 49, and 63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoffmann (7,212,499 82) in view of Ho (US 2004/0170217 A1).” (non-final office action, Part of Paper No./Mail Date 20070613, p. 13)

The Examiner asserts:

“8. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hoffmann (7,212,499 B2) in view of Shurmer (5,974,237), further in view of Ho (US 2004101 7021 7 A1).” (non-final office action, Part of Paper No./Mail Date 20070613, p. 14)

***Allowable Subject Matter***

The Examiner asserts:

“9. Claims 6, 8-12, 18-19, 21 -25, 30, 40, 42-46, 54, and 56-60 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.” (non-final office action, Part of Paper No./Mail Date 20070613, p. 14)

**35 U.S.C. § 102**

The Examiner asserts:

“2. Claims 1, 2, 4, 5, 14, 16, 27, 35, 36, 38, 39, 48, 50, 52, 53, and 62 are rejected under 35 U.S.C. 102(e) as being anticipated by Hoffmann (7,212,499 B2).” (non-final office action, Part of Paper No./Mail Date 20070613, p. 2)

The Applicant respectfully traverses.

The Applicant has amended certain of the claims.

The Applicant respectfully points out that, in order to support a proper rejection under 35 U.S.C. §102, a singular reference must teach and disclose each and every limitation of the subject matter as claimed by the Applicant. If the singular reference fails to teach and disclose each and every limitation of the subject matter as claimed by the Applicant, the rejections under 35 U.S.C. § 102 should be withdrawn.

The Applicant respectfully believes that Hoffmann fails to fails to teach and disclose each and every limitation of the subject matter as claimed by the Applicant.

The Examiner also asserts:

“Hoffman discloses a method for antenna steering for a wireless LAN.

Regarding claim 1, a PHY (see “PHY layer,” col. 6, line 8) that includes link quality intelligence gathering functionality (see “signal-related parameters such as signal quality ... ,” col. 6, lines 10-12); a MAC (see “MAC layer,” col. 6, line 4) that is communicatively coupled to the PHY (see Figure 8, items 805 and 810); wherein the link quality intelligence gathering functionality (see “signal-related parameters such as signal quality.. . ,” col. 6, lines 10-12) is operable to assess a plurality of operational parameters (see “signal-related parameters,” col. 6, lines 10-1 I ) that corresponds to a PHY link (see “PHY layer,” col. 6, line 8) that communicatively couples the PHY of the device to a PHY of at least one additional device (see Figure 8, items 810 and 815); and wherein the PHY (see “PHY layer,” col. 6, line 8) of the device is operable to provide assessed information corresponding to the plurality of operational parameters to the MAC (see “can provide signal-related parameters such as signal quality.. . ,” col. 6, lines 10-12).” (non-final office action, Part of Paper No./Mail Date 20070613, p. 2-3, emphasis added)

The Applicant respectfully believes that it is the MAC within Hoffman that includes any intelligence to gather and determine “metrics” which include the “signal-

related parameters, such as Received Signal Strength Indication (RSSI), Signal Quality (SQ), and indicated data rate”.

The Applicant respectfully believes that, when considering the entirety of Hoffman, it is not the PHY that assesses these metrics that include “signal-related parameters, such as Received Signal Strength Indication (RSSI), Signal Quality (SQ), and indicated data rate”, but rather it is the MAC layer therein that performs these operations based on a “baseband signal” provided by the PHY.

Hoffman explicitly teaches and discloses:

“In accordance with the 802.11 standard, the MAC layer 805 can determine signal metrics, such as signal-to-noise ratio, associated with RF signals communicated via the directive antenna 205a or other form of antenna. The MAC layer 805 employs the PHY layer 810 to convert and RF signal to a baseband signal, and vice-versa. The MAC layer 805 can use the PHY layer 810 to provide signal-related parameters, such as Received Signal Strength Indication (RSSI), Signal Quality (SQ), and indicated data rate. The MAC layer 805 may then provide the metrics to the SME 800 in the form of a datum associated with one antenna beam direction or a table of data associated with multiple antenna beam directions. The SME 800 may cause the MAC layer 805 to provide the metrics through use of commands or requests.” (Hoffman, col. 6, lines 4-18, emphasis added)

In at least one other portion of Hoffman, Hoffman explicitly teaches and discloses:

“Continuing to refer to FIG. 1B, during either a passive or an active scan, the second station 120b uses the directive antenna array to scan the RF airways in search of signals from the access points 110. At each scan direction, the second station 120b measures the received beacon signal or probe response and calculates a respective metric for that scan angle. Examples of the metrics include Received Signal Strength Indication (RSSI), Carrier-to-Interference ratio (C/I), Signal-to-Noise ratio (Eb/No), or other suitable measure of the quality of the received signal or signal environment. Based on the metrics, the second station 120b can determine a “best” direction to communicate with one of the access points 110a, 110b.” (Hoffman, col. 3, lines 38-50, emphasis added)

There are also other locations within Hoffman in which Hoffman describes what these “metrics” includes the claims of Hoffman located between col. 9, line 62 and the end of the U.S. patent of Hoffman.

Hoffman claims:

“1. A method for operating a directional antenna in a Wireless Local Area Network (WLAN), comprising:

causing a Medium Access Control (MAC) layer to provide metrics associated with respective beam angles of the directional antenna, wherein causing the MAC layer to provide the metrics includes receiving a table of previously calculated metrics from the MAC layer; and

based on the metrics, steering the directional antenna to a selected direction associated with an Access Point (AP).” (Hoffman, claim 1, emphasis added)

Hoffman claims:

“2. The method according to claim 1 wherein causing the MAC layer to provide the metrics includes causing the MAC layer to determine the metrics as a function of received energy by the directional antenna in the beam angles.” (Hoffman, claim 2, emphasis added)

As can be seen, Hoffman describes and even claims that it is “the MAC layer to determine”, and it is the “Medium Access Control (MAC) layer to provide metrics”. It is not the PHY that provides these metrics within Hoffman.

Other examples even within the claims of Hoffman describe further what some of these metrics are.

Hoffman claims:

“9. The method according to claim 1 wherein the metrics correspond to beam angles relative to one access point.

10. The method according to claim 1 wherein the metrics correspond to beam angles relative to multiple access points.

11. The method according to claim 1 wherein the metrics includes at least one of the following: Signal-To-Noise Ratio (SNR), Energy-per-bit per total Noise (Eb/No), Received Signal Strength Indication (RSSI), and Carrier-to-Interference Ratio (C/I).

...

24. The apparatus according to claim 13 wherein the metrics include at least one of the following: Signal-to-Noise Ratio (SNR), Energy-per-Bit per Total Noise (Eb/No), Received Signal Strength Indication (RSSI), and Carrier-to-Interference Ratio (C/I).” (Hoffman, claim 9-11, and 24, emphasis added)

While the “metrics” within Hoffman may “correspond” to “beam angles relative to one access point” or “beam angles relative to multiple access points”, it is clear that Hoffman intends that the “metrics” within Hoffman “include at least one of the following: Signal-to-Noise Ratio (SNR), Energy-per-Bit per Total Noise (Eb/No), Received Signal Strength Indication (RSSI), and Carrier-to-Interference Ratio (C/I)”.

In other portions of Hoffman (as cited above), Hoffman explicitly teaches and discloses that “the MAC layer 805 can determine signal metrics, such as signal-to-noise ratio, associated with RF signals communicated via the directive antenna 205a or other form of antenna. The MAC layer 805 employs the PHY layer 810 to convert and RF signal to a baseband signal, and vice-versa. The MAC layer 805 can use the PHY layer 810 to provide signal-related parameters, such as Received Signal Strength Indication (RSSI), Signal Quality (SQ), and indicated data rate”.

Again, it is the “MAC layer” that determines the “metrics”, not the “PHY”. The MAC includes any appropriate intelligence to determine these “metrics” associated with the “RF signals” based on the baseband signal provided to the MAC from the PHY. The PHY appears to be a non-intelligent device that does not even seem to perform the RF signal to baseband signal conversion on its own, but only when directed by the MAC.

As cited above, “The MAC layer 805 employs the PHY layer 810 to convert and RF signal to a baseband signal, and vice-versa.”

When considering FIG. 8 of Hoffman, it appears that command signals are only provided by the MAC layer 805 and the SME 800. These commands may be provided to the PHY layer 810, but the PHY layer 810 seems only to provide the “baseband signal” to the MAC layer 805 and the SME 800.

Thereafter, it is the MAC layer 805 that seems to use the “baseband signal” to determine the “metrics” (e.g., “the MAC layer 805 can determine signal metrics, such as signal-to-noise ratio, associated with RF signals” and “the MAC layer to determine the”

metrics as a function of received energy” as cited above), apparently based on the “baseband signal” provided to it from the PHY layer 810.

Other locations within Hoffman also seem to describe this functionality of determining the metrics, which include the “signal metrics, such as signal-to-noise ratio, associated with RF signals” as being determined within the “the MAC layer 805”, and not within the PHY layer 810.

Hoffman teaches and discloses:

“In operation, the SME 800 may cause the MAC layer 805 to provide metrics associated with respective beam angles of the directive antenna array 205a. Based on the metrics and predetermined criteria, the SME 800 may steer the directive antenna array 205a to a selected direction associated with an access point 110.

In a passive scan embodiment, the MAC layer 805 may be caused to determine the metrics as a function of received RF energy by the directive antenna array 205a in the respective beam angles. For example, the metrics may be higher for signal strength of a beacon signal received from a first access point 110a as compared to signal strength of a beacon signal received from a second access point 110b. In an active scan embodiment, the SME 800 may cause the MAC layer 805 (i) to transmit a signal via the physical layer 810 to at least one access point 110a, 110b, or 110c and (ii) to measure a response from the access point(s) 110.” (Hoffman, col. 6, lines 19-36, emphasis added)

The Applicant respectfully believes that with respect to any RF signals, it is the MAC layer that performs the determining of “signal metrics, such as signal-to-noise ratio, associated with RF signals” and these “signal metrics” also include “at least one of the following: Signal-to-Noise Ratio (SNR), Energy-per-Bit per Total Noise (Eb/No), Received Signal Strength Indication (RSSI), and Carrier-to-Interference Ratio (C/I)”.

The Applicant respectfully believes that Hoffman clearly teaches and discloses that “the MAC layer 805 can determine signal metrics, such as signal-to-noise ratio, associated with RF signals communicated via the directive antenna 205a or other form of antenna.” (as cited from Hoffman above)

The Applicant does acknowledge that Hoffman teaches and discloses that “MAC layer 805 can use the PHY layer 810 to provide signal-related parameters, such as Received Signal Strength Indication (RSSI), Signal Quality (SQ), and indicated data

rate”, but when considering the entirety of Hoffman, it appears that the “MAC layer 805” of Hoffman “can use the PHY layer 810” in the role of providing a baseband signal to the MAC layer 805 so that the MAC layer 805 can process the baseband signal and determine the metrics (e.g., “The MAC layer 805 employs the PHY layer 810 to convert and RF signal to a baseband signal, and vice-versa”).

It is the “the MAC layer 805” that actually assesses and determines these “metrics” (e.g., “the MAC layer 805 can determine signal metrics, such as signal-to-noise ratio, associated with RF signals”).

When Hoffman teaches and discloses that the “The MAC layer 805 can use the PHY layer 810 to provide signal-related parameters, such as Received Signal Strength Indication (RSSI), Signal Quality (SQ), and indicated data rate” (as cited from Hoffman above), the Applicant respectfully believes that, when considering the entirety of Hoffman, it appears that Hoffman still teaches and discloses that “the MAC layer 805 can determine signal metrics, such as signal-to-noise ratio, associated with RF signals”, and these metrics include “at least one of the following: Signal-to-Noise Ratio (SNR), Energy-per-Bit per Total Noise (Eb/No), Received Signal Strength Indication (RSSI), and Carrier-to-Interference Ratio (C/I)”.

In the Examiner-cited portion of Hoffman, where the Examiner asserts “a PHY (see “PHY layer,” col. 6, line 8) that includes link quality intelligence gathering functionality (see “signal-related parameters such as signal quality ...,” col. 6, lines 10-12)”, but continuing on with that portion, Hoffman teaches and discloses, “signal-related parameters, such as Received Signal Strength Indication (RSSI), Signal Quality (SQ), and indicated data rate”.

In many other portions, Hoffman teaches and discloses that such elements as “Received Signal Strength Indication (RSSI)” are “metrics”, and these “metrics” are determined by the MAC layer therein (e.g., “the MAC layer 805 can determine signal metrics, such as signal-to-noise ratio, associated with RF signals”, and these metrics include “at least one of the following: Signal-to-Noise Ratio (SNR), Energy-per-Bit per Total Noise (Eb/No), Received Signal Strength Indication (RSSI), and Carrier-to-Interference Ratio (C/I)”).

These “metrics” are not determined by the PHY layer within Hoffman.



Again, the Applicant does acknowledge that Hoffman teaches and discloses that “MAC layer 805 can use the PHY layer 810”, but this appears to be in accordance with using the “PHY layer 810” to provide a baseband signal to the “MAC layer 805”, so that the “the MAC layer 805 can determine signal metrics, such as signal-to-noise ratio, associated with RF signals” after processing the baseband signal.

It is not the “PHY layer 810” that “can determine signal metrics, such as signal-to-noise ratio, associated with RF signals” in accordance with the teaching and disclosure of Hoffman.

As such, it does not appear that there is any “link quality intelligence gathering functionality” within the “PHY layer 810” of Hoffman that “can determine signal metrics, such as signal-to-noise ratio, associated with RF signals”.

In contradistinction, any intelligence within the device of Hoffman seems to be in the “the MAC layer 805”, since it is clear that the “the MAC layer 805 can determine signal metrics, such as signal-to-noise ratio, associated with RF signals”.

The Applicant respectfully believes that these comments made above with respect to Hoffman are also applicable with respect to all of the independent claims of the Applicant’s, in that, Hoffman fails to teach and disclose at least this limitation in accordance with the subject matter as claimed by the Applicant.

For at least these reasons, the Applicant respectfully believes that Hoffman fails to teach and disclose each and every limitation of the subject matter as claimed by the Applicant in independent claim 1.

The Applicant respectfully believes that independent claim 1 is allowable over Hoffman.

These comments made above with respect to the Applicant’s independent claim 1 are also applicable with respect to the Applicant’s independent claims 16, 35, and 50.

The Applicant respectfully believes that Hoffman does not teach and disclose each and every limitation of the subject matter as claimed by the Applicant in independent claims 16, 35, and 50.

The Applicant respectfully believes that independent claims 16, 35, and 50 are allowable over Hoffman.

Moreover, the Applicant respectfully believes that the dependent claims within claims 1, 2, 4, 5, 14, 16, 27, 35, 36, 38, 39, 48, 50, 52, 53, and 62 under 35, being further limitations on the subject matter of allowable independent claims, are also allowable.

As such, the Applicant respectfully requests that the Examiner withdraw the rejections to claims 1, 2, 4, 5, 14, 16, 27, 35, 36, 38, 39, 48, 50, 52, 53, and 62 under 35 U.S.C. § 102(e) as being anticipated by Hoffmann.

***35 U.S.C. § 103***

The Examiner asserts:

“4. Claims 7, 20, 29, 33, 41, 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoffmann (7,212,499 B2) in view of Shurmer (5,974,237).” (non-final office action, Part of Paper No./Mail Date 20070613, p. 9)

The Applicant respectfully traverses.

The Applicant has amended certain of the claims.

The comments made above with respect to Hoffman are also applicable here.

The Applicant also respectfully believes that the inclusion of Shurmer does not overcome the deficiencies of Hoffman.

The Applicant respectfully believes that the combination of Hoffman and Shurmer fails to teach and disclose each and every limitation of the subject matter as claimed by the Applicant in independent claim 29.

The Applicant respectfully believes that independent claim 1 is allowable over Hoffman in view of Shurmer.

Moreover, the Applicant respectfully believes that the dependent claims within claims 7, 20, 29, 33, 41, 55, being further limitations on the subject matter of allowable independent claims, are also allowable.

As such, the Applicant respectfully requests that the Examiner withdraw the rejections to claims 7, 20, 29, 33, 41, 55 under 35 U.S.C. § 103(a) as being unpatentable over Hoffmann in view of Shurmer.

The Examiner asserts:

“5. Claims 3, 17, 31, 37, and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoffmann (7,212,499 B2) in view of Jorgensen (6,640,248 B1).” (non-final office action, Part of Paper No./Mail Date 20070613, p. 11)

The Applicant respectfully traverses.

The Applicant has amended certain of the claims.

The comments made above with respect to Hoffman are also applicable here.

The Applicant also respectfully believes that the inclusion of Jorgensen does not overcome the deficiencies of Hoffman.

Moreover, the Applicant respectfully believes that the dependent claims within claims 3, 17, 31, 37, and 51, being further limitations on the subject matter of allowable independent claims, are also allowable.

As such, the Applicant respectfully requests that the Examiner withdraw the rejections to claims 3, 17, 31, 37, and 51 under 35 U.S.C. § 103(a) as being unpatentable over Hoffmann in view of Jorgensen.

The Examiner asserts:

“6. Claims 13, 26, 32, 47, and 61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoffmann (7,212,499 B2) in view of Olson (6,928,295 B2).” (non-final office action, Part of Paper No./Mail Date 20070613, p. 12)

The Applicant respectfully traverses.

The Applicant has amended certain of the claims.

The comments made above with respect to Hoffman are also applicable here.

The Applicant also respectfully believes that the inclusion of Olson does not overcome the deficiencies of Hoffman.

Moreover, the Applicant respectfully believes that the dependent claims within claims 13, 26, 32, 47, and 61, being further limitations on the subject matter of allowable independent claims, are also allowable.

As such, the Applicant respectfully requests that the Examiner withdraw the rejections to claims 13, 26, 32, 47, and 61 under 35 U.S.C. § 103(a) as being unpatentable over Hoffmann in view of Olson.

The Examiner asserts:

“7. Claims 15, 28, 49, and 63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoffmann (7,212,499 82) in view of Ho (US 2004/0170217 A1).” (non-final office action, Part of Paper No./Mail Date 20070613, p. 13)

The Applicant respectfully traverses.

The Applicant has amended certain of the claims.

The comments made above with respect to Hoffman are also applicable here.

The Applicant also respectfully believes that the inclusion of Ho does not overcome the deficiencies of Hoffman.

Moreover, the Applicant respectfully believes that the dependent claims within claims 15, 28, 49, and 63, being further limitations on the subject matter of allowable independent claims, are also allowable.

As such, the Applicant respectfully requests that the Examiner withdraw the rejections to claims 15, 28, 49, and 63 under 35 U.S.C. § 103(a) as being unpatentable over Hoffmann in view of Ho.

The Examiner asserts:

“8. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hoffmann (7,212,499 B2) in view of Shurmer (5,974,237), further in view of Ho (US 2004101 7021 7 A1).” (non-final office action, Part of Paper No./Mail Date 20070613, p. 14)

The Applicant respectfully traverses.

The Applicant has amended certain of the claims.

The comments made above with respect to Hoffman are also applicable here.

The Applicant also respectfully believes that the inclusion of Shurmer, further in view of Ho, does not overcome the deficiencies of Hoffman.

Moreover, the Applicant respectfully believes that the dependent claim 34, being a further limitation on the subject matter of an allowable independent claim, is also allowable.

As such, the Applicant respectfully requests that the Examiner withdraw the rejections to claim 34 under 35 U.S.C. § 103(a) as being unpatentable over Hoffmann in view of Shurmer, further in view of Ho.

***Allowable Subject Matter***

The Examiner asserts:

“9. Claims 6, 8-12, 18-19, 21 -25, 30, 40, 42-46, 54, and 56-60 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.” (non-final office action, Part of Paper No./Mail Date 20070613, p. 14)

The Applicant respectfully traverses the objections to claims 6, 8-12, 18-19, 21 -25, 30, 40, 42-46, 54, and 56-60.

In view of at least the comments submitted herewith, the Applicant respectfully believes that independent claims 1, 16, 29, 35, and 50 are allowable.

The Applicant respectfully believes that dependent claims 6, 8-12, 18-19, 21 -25, 30, 40, 42-46, 54, and 56-60, being further limitations of the subject matter as claimed in allowable independent claims, are also allowable.

As such, the Applicant respectfully requests that the Examiner withdraw the objections to claims 6, 8-12, 18-19, 21 -25, 30, 40, 42-46, 54, and 56-60.

**New POWER OF ATTORNEY/CORRESPONDENCE ADDRESS****(Customer Number 51472)**

Again, the Applicant respectfully points out that the Applicant is also submitting a new “power of attorney” herewith that both (1) appoints practitioners associated with USPTO customer number (CN) 51472 and also (2) indicates the new correspondence address of the present U.S. utility patent application to be that which is associated with USPTO CN 51472 (which is also listed below):

GARLICK HARRISON & MARKISON  
P.O. Box 160727  
AUSTIN, TEXAS 78716-0727

The Applicant respectfully believes that claims 1-63 are in condition for allowance and respectfully requests that they be passed to allowance.

The Examiner is invited to contact the undersigned by telephone or facsimile if the Examiner believes that such a communication would advance the prosecution of the present U.S. utility patent application.

RESPECTFULLY SUBMITTED,

By:                     /SXShort/ Reg. No. 45,105                      
Shayne X. Short, Ph.D., Reg. No. 45,105  
Direct Phone: (512) 825-1145  
Direct Fax No. (512) 394-9006

GARLICK HARRISON & MARKISON  
ATTORNEYS AT LAW  
P.O. Box 160727  
AUSTIN, TEXAS 78716-0727

TELEPHONE (512) 825-1145 / FACSIMILE (512) 394-9006 OR (512) 301-3707